UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,884	02/27/2002	Manoharprasad K. Rao	201-0939 FAM	7808

28549 7590 06/11/2003

KEVIN G. MIERZWA
ARTZ & ARTZ, P.C.
28333 TELEGRAPH ROAD, SUITE 250
SOUTHFIELD, MI 48034

EXAMINER
GIBSON, ERIC M

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/683,884	RAO ET AL.	
	Examin r	Art Unit	
	Eric M Gibson	3661	

-- The MAILING DATE f this communication appears on the c ver sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

The references to related applications should include the US Application Number in place of the Attorney Docket Number. Appropriate correction is required.

Claim Objections

2. Claims 1-20 are objected to because of the following informalities:

a. Claims 1-20 do not contain a space between the claim numbers and the beginning of the claim.

b. Claims 1 (line 3) and 9 (line 4) should include –an— before "object sensor".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12, 19, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. As per claim 1, the claim language is found vague and indefinite because the phrase "a countermeasure system having a countermeasure comprising:" is unclear. It is not clear whether or not the limitations which follow are a part of the countermeasure (a *countermeasure* comprising:...), the countermeasure system (a *countermeasure system*, having a countermeasure, comprising:...), or the pre-crash sensing system (Similar to claim 9, i.e. *A pre-crash sensing system*...comprising:...). Clarification is needed.

b. Additionally in claim 1, line 7, the phrase "said object sensor object classifier" is unclear. The clarity of the claim can be corrected by inserting –and— between "said object sensor" and "object classifier."

c. Claim 2 recites the limitation "said vision system" in line 1. There is insufficient antecedent basis for this limitation in the claim. There is no prior recitation of a "vision system" in the claims.

d. Claims 5-7 recite the limitation "the object size" in line 1. There is insufficient antecedent basis for this limitation in the claims. There is no prior recitation of an "object size" in claim 1.

e. Claims 3, 4 and 8 are necessarily rejected as being dependent upon a rejected base claim.

f. In claim 9, line 8, the phrase "said object sensor object classifier" is unclear. The clarity of the claim can be corrected by inserting –and—between "said object sensor" and "object classifier."

g. Claims 10 and 11 recite the limitation "said object size" in line 1. There is insufficient antecedent basis for this limitation in the claims. There is no prior recitation of an "object size" in claim 9.

h. Claim 12 recites the limitation "said object size and said object height" in line 2-3. There is insufficient antecedent basis for this limitation in the claim. There is no prior recitation of an "object size and height" in claim 9.

i. Additionally in claim 12, it is unclear whether or not the controller "classifies" the object as claimed in line 1, because it appears from claim 9, that the controller "activates" the countermeasure and the "object classifier" is the appropriate element that "classifies" the object. Clarification is required.

j. Claim 19 recites the limitation "said object size" in line 3. There is insufficient antecedent basis for this limitation in the claim. There is no prior recitation of an "object size" in claim 13.

k. Claim 20 recites the limitations "the vehicle orientation" in line 2, "the object size" in line 3, and "the object size and vehicle orientation" in line 4. There is insufficient antecedent basis for these limitations in the claim. There is no prior recitation of a "vehicle orientation" or an "object size" in claim 13.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 3-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirai (US006018308A).

a. As per claim 1, Shirai teaches a pre-crash sensing system for a vehicle including an object sensor (5, figure 1) generating an object signal, distance signal, azimuth position signal and relative velocity signal (column 4, lines 25-45), an object classifier generating an object classification signal (object recognition circuit 43, figure 2), and a controller (3, figure 1) for activating a countermeasure in response to the object distance, azimuth position, relative velocity, and object classification signal (column 6, lines 25-40).

b. As per claim 3, Shirai teaches that the object classifier generates a signal in response to an object size (column 6, lines 57-60).

c. As per claim 4, Shirai teaches that the object sensor is a radar system (column 4, lines 25-26).

d. As per claims 5-7, Shirai teaches using object size to classify the object (column 5, lines 37-57).

e. As per claim 8, Shirai teaches a speed sensor (7, figure 1), wherein the system implements a first countermeasure (brake actuator 19, figure 1) or a second countermeasure (throttle actuator 21, figure 1) in response to the speed signal (column 5, lines 14-18).

f. As per claim 9, Shirai teaches a pre-crash sensing system for a vehicle including an object sensor (5, figure 1) generating an object signal, distance signal,

azimuth position signal and relative velocity signal (column 4, lines 25-45), an object classifier generating an object classification signal (object recognition circuit 43, figure 2), and a controller (3, figure 1) for activating a first countermeasure (brake actuator 19, figure 1) or a second countermeasure (throttle actuator 21, figure 1) in response to the object distance, azimuth position, relative velocity, and object classification signal (column 6, lines 25-40).

g. As per claims 10-12, Shirai teaches using object size to classify the object (column 5, lines 37-57).

h. As per claim 13, Shirai teaches a pre-crash sensing method for a vehicle including establishing a detection zone (see figure 3), an object sensor (5, figure 1) detecting an object, detecting distance, azimuth position and relative velocity (column 4, lines 25-45), an object classifier determining an object classification (object recognition circuit 43, figure 2), and a controller (3, figure 1) for activating a countermeasure in response to the object distance, azimuth position, relative velocity, and object classification signal (column 6, lines 25-40).

i. As per claim 14, Shirai teaches using object size to classify the object (column 5, lines 37-57).

j. As per claims 15-17, Shirai teaches using object size to classify the object (column 5, lines 37-57).

k. As per claim 18, Shirai teaches that the object sensor is a radar system (column 4, lines 25-26).

l. As per claim 19, Shirai teaches a first countermeasure (brake actuator 19, figure 1) or a second countermeasure (throttle actuator 21, figure 1) in response to the object (column 5, lines 14-18).

m. As per claim 20, Shirai teaches determining the vehicle orientation (column 5, lines 27- 35) and activating the countermeasure in response to the object size and orientation (column 6, lines 57-66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai in view of Ansaldi et al. (US005343206A).

a. As per claim 2, Shirai teaches the invention as explained in the rejection of claim 1. Shirai does not teach a "vision" system, instead teaching a radar system. Ansaldi teaches object detection for vehicle collision systems including that both passive (vision systems) and active (radar systems) are well known in the art for the detection of obstacles (column 1, lines 22-32). It would have been obvious to one of ordinary skill in the art, at the time of invention, to use a "vision" system in the place of the radar system taught by Shirai as they are well-known equivalents in the art, each one having advantages and disadvantages as a design choice, evidenced by Ansaldi.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakamura et al. (US006311123B1) teaches a vehicle control and warning method. Morikawa et al. (US006147637A) teaches an obstacle detecting system for an automotive vehicle. Khodabhai (US005959569A) teaches a method and apparatus for in-path target determination for an automotive vehicle using a gyroscopic device. Shaw et al. (US005529138A) teaches a vehicle collision avoidance system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M Gibson whose telephone number is (703) 306-4545. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on (703) 308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

MICHAEL J. ZANELLI
PRIMARY EXAMINER

EMG
June 9, 2003